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## STEREOTYPE FOUNDRY.

By turning to the last page of the present number, the reader will see at one side of the large floor in which the steam-engine is at work, a correct view of the Stereotype Foundry. When the types are set up, each page is fastened in a chase, something in the way before described for printing, and from these an exact cast is taken in Plaster of Paris, which is put into an oven, and thoroughly dried or baked; it is then put into what is technically termed the dipping-pan, and let down by a small windlass or crane into the melted metal, and kept under the surface for a short time, when it is again drawn up and left to cool on wet sand. The plate is now cleared of any extraneous metal that may have adhered to it; and being found perfect, it is placed in a small lathe, which moves horizontally, and the bottom or lower surface revolving against a sharp cutting tool, any inequalities in the thickness are removed. It is then handed to the picker, who removes any imperfections which may have been caused by the metal forming into small globules, while filling into the plaster mould. This renders the plate perfect, and it is now laid by as ready for the press, being a complete *fac simile*, or counterpart of the type from which the mould was taken—the letters being equally well formed, and sharp in the face.

While, however, the process of stereotyping is very simple, it requires a good workman, well acquainted with the process, to produce plates free from picks, and which will give off a clear and sharp impression on the paper. This is particularly the case where there are wood cuts, as in the Penny Journal; many of the lines in the wood engraving being very fine, and not very deeply cut, unless great care is taken the stereotype will be defective. Much depends on the temperature of the metal at the time of casting, on the preparing and running of the plaster into or upon the cut, and upon the gradual and careful drying or baking of the mould, after the impression of the types have been taken off. The advantages which stereotyping affords are, first, the common types and wood engravings are not worn out as they would be by taking off large impressions. Secondly, by taking off several plates of the same thing, we are enabled to multiply copies to any required extent, with a great reduction of labour in press-work, and a consequent reduction of expense. It also enables us to print just as many copies of a work as may be required for the present, and afterwards to meet any further demand without running the risk of a large edition remaining unsold, as a small edition of any number can be printed off at a day's notice. It is, however, applicable only in peculiar cases—in works where large editions are required, and where there is a probability of a continued demand, such, for instance, as the Penny Journal.

Very exaggerated reports have been circulated as to the extraordinary profits produced by employing Machines; but it is difficult, indeed almost impossible, to give any exact data by which to estimate the saving arising from using a Machine as compared with the common press, so much depends upon the quantity of work, the nature of that work, the number printed from each form, &c. The Weekly Expense of steam power and persons necessary to attend the Machine, is £4 10s.; to which may be added the interest on £500, the first cost of Machine, Steam Engine, fitting up, &c., &c., with ten per cent. for wear, tear, and repair, &c., as these are greater than in the common press.

## THE STEAM-ENGINE.

Our steam engine is what is called a high pressure engine. It is nominally a three-horse power, but can be worked to four horse. It is of a very simple construction—(A,) the boiler, which is supplied with water pumped from a considerable distance by the engine itself, and which requires about three cwt. of coal per day to keep it at the proper temperature: (B) the steam-pipe, acting on the piston (C) and which working up and down, turns the small crank D, or shaft of which is the fly-wheel, E, and F, the drum, or small wheel, over which the belt passes which gives the motion to the Printing Machine. Professor Stevelly, of the Belfast College, when lecturing some time since in the Dublin Society House, referred to this engine as the best constructed of the

kind which he had ever seen. It loses very little of its power by friction, the parts being so few and so simple. To the boiler there is a safety valve and a gauge, which tells the exact pressure; and, although by many high-pressure engines are considered dangerous, from our experience we would say that there is scarcely any danger whatever; indeed, no accident could well occur, except by extreme negligence. High-pressure steam engines are employed with most advantage. 1st. Because the greater the compression of the steam, the less is the space the engine occupies. 2d. Because it produces an equal power to that of a low pressure engine, with a smaller quantity of fuel.—The kind of boiler used is a single tube made of wrought iron plates, with ends of the same material, and of a hemispherical form; it is placed horizontally, the water occupying by far the larger portion of the space within, and the fire is applied under the bottom part.

## THE PENNY JOURNAL.

Without the assistance of our Stereotype Foundry and Printing Machine, we could not, by any means, have carried on the Penny Journal. From the following statement of the First Cost of the article we sell each week for a penny, which we quote from our cotemporary, the London Penny Magazine, some idea may be formed of the efforts required to support such a publication, in this country:

"After the experience of three centuries and a half, the power of reading has become so generally diffused, that a work like the Penny Magazine, which requires a sale of sixty or seventy thousand copies, may be undertaken, with a reliance alone upon the general demand arising out of the extended desire of knowledge. The wood-cuts themselves of the Penny Magazine, for example, required to produce a yearly volume amounts to three thousand pounds, or sixty thousand shillings. If one hundred and twenty thousand copies are sold, that expense is sixpence upon each volume; if sixty thousand, one shilling; if ten thousand six shillings; if three thousand, one pound.—The purchasers, therefore, of a twelve months' number of the Penny Magazine, buy not only sixty-four sheets of printed paper, but as much labour of literature and art as would cost a pound if only three thousand copies were sold, and six shillings if only ten thousand copies were sold. Those, therefore, who attempt to persuade the public that cheap books must essentially be bad books, are very shallow, or very prejudiced reasoners. The complete reverse is the truth. The cheapness insures a very large number of purchasers; and the larger the number the greater the power of commercially realizing the means for a liberal outlay upon those matters in which the excellence of a book chiefly consists—its text and its illustrations."

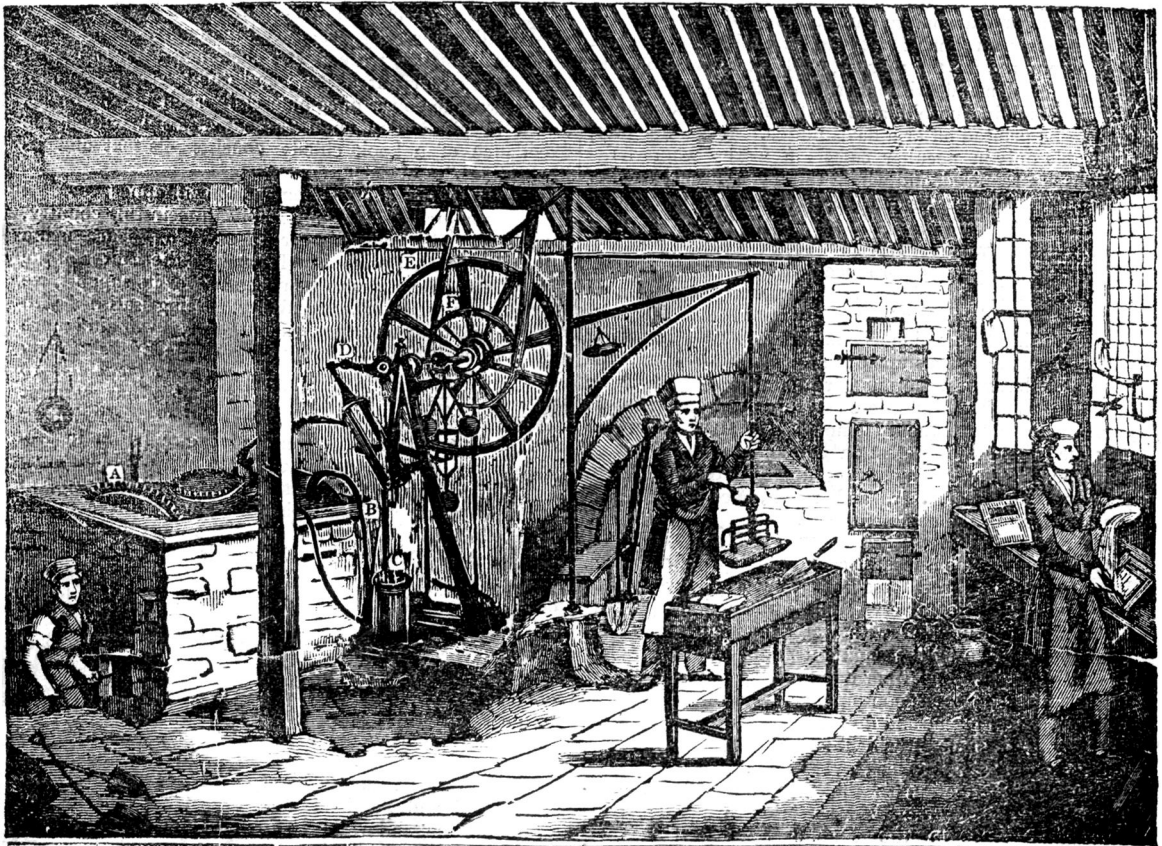
From the foregoing statement it will appear evident that in conducting a Penny Publication in this country, we labour under many disadvantages. To procure such a sale for a journal printed in Ireland, as the Editor of the Penny Magazine states to be necessary for its support, we consider an utter impracticability. Being satisfied with smaller profits to ourselves, and by going to work in a more economic way than the proprietors of the English Penny Journal conceive necessary, we have been enabled to succeed beyond the expectations of some of our warmest friends and supporters; and have now the satisfaction, stating, that besides a very extensive circulation in Ireland, at the present moment there are more of our Penny Journals sold in England than there are of the English Penny Magazine sold through the entire of this country. Already has it been sent to some of the most distant portions of the globe—to Van Dieman's land, the United States, North America, and the East Indies. It is not a month since we received an order from an English bookseller for a tolerably large parcel to be shipped for Calcutta: and, we feel certain, that before another year shall have rolled away, it will have found its way into the most remote regions of the earth. Indeed we take some credit to ourselves when we reflect that left to our individual efforts, unsupported by any public body established for the promotion of literature, as the English Penny Magazine is, that while that and every other penny publication in England and Scotland have been for some time past on the decline, and while the Irish Penny Magazine, originally started as a rival to the Journal, has long

ceased to exist, our little bark has weathered the gale, and in the face of all opposition, is now making sure and certain progress, by extending its circulation in every direction. We say not this as an empty boast. It is a fact or a falsehood which may be easily determined by a reference to booksellers generally, more particularly to those who are our agents here and in England. No doubt we have been required to sink an amount of capital in the concern far beyond any thing which might be contemplated by persons unacquainted with the heavy expences incurred in bringing out a periodical of this description. We have also, in the prosecution of our work, had numerous difficulties to encounter and overcome, which had they been known to our readers, we have no doubt would frequently have induced them to overlook many of our deficiencies and short comings, and to give us credit for what we attempted. When the Penny Journal at first came into our hands, our Printing Machine had not been set to work. It was the first and is the only machine of the kind which has been introduced into Ireland. A prejudice existed against it by the workmen.—It is but justice, however, to say for them, that although many of them at first considered it would deprive them to a certain extent of their accustomed labour, there was not at any time the slightest attempt made to injure the machine, or prevent its working. Still it was a complete novelty. There was not an individual in the country who knew any thing of its construction; and, in consequence of a delay which occurred in the progress of its first erection, a workman who came over from Scotland to instruct one of our workmen how to manage it, had to return without imparting the requisite information. Thus, left to ourselves, it could not be expected that the work done by the machine could at all bear comparison with that done in an establishment in the sister island, where practice had made perfect, and where, if any thing went wrong with the machine, there were mechanics on the spot, who understood the principle on which it was constructed, and could at once remedy a defect or supply a deficiency.—Then, again, when we commenced the Journal, the wood engravings were not cut in a way calculated to work well on the machine; added to which, in all Ireland we could not procure a workman who perfectly understood the stereotyping of the engravings—nor, indeed, could we,

for several months after, procure one from Scotland or England. With these difficulties in our way, it is not much to be wondered at that the impressions of the Journal were at times faint and imperfect, and at others so filled up with ink as to destroy the effect of the engravings. Indeed we had more than once determined on making an apology to our readers on these points, but being always averse to excuses in any shape, we determined to let our progressive improvement bespeak our intentions. But here, again, we were in a great degree thrown out of our calculation; for the machine having been originally placed in an upper story of our office, the tremor produced by its working, so shook the entire house, as to render it necessary to remove it to the ground floor. We are, however, now once more regularly at work, and after the experience our workmen have had, we trust we shall never again have to allude to the subject in the way of apology or excuse. At the same time, while we consider it thus necessary to explain the causes of our deficiency, we feel persuaded that when the second volume of our Journal is completed, which it will now be in the course of a month, it will not be considered creditable to the country, or unworthy of a comparison even with the London Penny Magazine, with all its advantages of printing and patronage. But our readers will probably begin to think that enough has been said on this subject; as we think so too, we shall merely add that as it is the *first* excuse we have attempted, we trust it will be the *last* we shall ever have occasion to make for any deficiency in the appearance or the workmanship of the Dublin Penny Journal.\*

\* It is but fair to mention that the greater proportion of our wood engravings have been executed by Mr. B. Clayton, jun., of this city, in whose style there is evidently a great improvement since he commenced engraving for this Journal. The engravings to No. 91, Carrigadrohid; No. 93, Bridge at Cappoquin; and No. 94, abbey at Youghal and Tower of Castledermot, which appeared in recent numbers, are by a celebrated London artist. We confess we think them little to his credit. Perhaps we should also mention, that in the hurry of going to press, the name of the talented artist for whom we are indebted for several of our best sketches in the north of Ireland, Mr. A. Nichol, was omitted.

STEREOTYPE FOUNDRY, AND STEAM-ENGINE.



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